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Opinions expressed in the articles and reviews are individuals and do not necessarily reflect the policies of the Association

Editor

M S RAMAMURTHY

INSAT-1B and Higher Education

Text of the paper presented by Prof Ram Takwale, Vice-Chancellor, University of Poona at a seminar organised by Delhi University

INSAT-1B is the precursor of the communication revolution in India. New communication and processing media with audio-visual communications and computers are entering quite rapidly in economic, industrial and social life of our country. Higher education has to prepare itself to adopt and use the new technologies for various functions of educational institutions.

I. Facilities of New Technologies

Universities carry out mainly three functions, research, teaching and extension. Creation of knowledge and expertise, dissemination of these to students and society are the well accepted role of the educational institutions. Communication media along with computer capabilities offer economic, fast and convenient ways of carrying out storing, processing and transmitting knowledge.

Audio and video tapes, floppy discs, magnetic discs, video discs etc. are available for storage of information. The information could be recorded either by video cameras, audio recorders of different types or by data entry systems through keyboards and can be processed through micro processor devices and transmitted to any other place through telephone wire, cable radio and TV waves, micro waves etc. It is received either on the TV screen or heard or recorded on receiver. Decreasing size and versatile nature of the electronic gadgets are developed so fast that within a short period they would be made available to individuals and institutions at a fairly low cost.

The new technologies and its utilization have the following important features:

- Economical** micro-miniaturisation has reduced size & automation increased production resulting in lesser costs.
- Versatile** Potential of hardware is exploited for wider uses even by common man in diverse activities.
- Wider accessibility** above two characteristics would allow practically every one to use

both for receiving information and creating information

- (d) **Decentralised nature** lower costs of recording and display equipment allows wider use and many creative and innovative uses by individuals and groups. Instead of uniformity, this technology is capable of promoting diversity and would suit a country with cultural diversity

II. Communication Technology in India

Progress in communication technology in the developed countries is changing their way of life. It would take some more time, possibly 5-10 years to get that technology to India and initially it might be beyond the reach of the common man. However, India is following the same path of scientific & technological development and has entered into the race with INSAT 1-B. Within two years, 70% of the Indian population would be able to watch TV programmes through the national TV-network. TV would be available for Rs 1200/- (black and white) and Colour for Rs 5000/-. Efforts are being made to manufacture small computers or personal computers and they would be made available to every school and college. Computer literacy would be developed amongst the new generation. Availability and lower costs of microprocessor chips would generate varied applications in all walks of life. Economic backwardness may not allow these gadgets to reach every family or individual, but proper policy and programmes may help us in taking the new technologies to community and institutions a boon in disguise.

III University Role

Present forms of teaching-learning have essentially two components, one is the transmission of knowledge of information and the other is imparting skills and values. When printing was not known teaching was done through oral instructions. With the advent of printing technology, books became important media of teaching and learning. With new technologies of audio-visual communication, transmission of information will cease to be a function of teacher and would be taken over by the new technology. However, role of a teacher as a demonstrator of skills and cultivator of values would remain forever and would acquire prominence.

Full time formal education is not the right way for large enrolment of students. The education has to become diversified to fulfil a variety of social needs and has to be vocational and relevant. Open University in U.K. has successfully offered courses even in science and technology subjects by supplementing distance education media with home experimental kits and lab works during vacation periods. Many aspects of knowledge, skills and values cannot be learnt by remaining within four walls of the University. In fact life and society often provide good opportu-

nities of learning. In a learning society every place could be a learning place. Hence the role of a University needs to be widened to offer non-formal courses for part-time and own-time students, besides the full time formal courses.

The Universities have recently acquired function of extension of knowledge to fulfil its social obligations and to become responsive to social problems and needs. Formal and non-formal courses could now be offered through the centres of continuing education by using new technologies, which is yet to enter our educational institutions but whose potentialities are well recognised.

New technology would essentially help in three functions of teaching:

- (a) library function by storing knowledge at one or many places with linkages amongst themselves and with users
- (b) delivery of knowledge by transmitting stored information through broadcast and non-broadcast modes
- (c) lecturing in which one presents information with comprehension by processing the information through computers and presenting it through communication network in different forms easy to understand and learn
- (d) part of tutoring by creating interactive learning packages

With wider use of technology functions of teacher are also elevated and he would have to do higher task of preparing educational information for new media by understanding both the student learning process and capability and scope of the technology.

IV Measures for adoption and development

With a long term goal of establishing communication information network accessible to every institution and individual we should start building the network, part by part, for various segments of education. Since the technology is essentially coming from the developed countries, we should accept and adapt it to suit our educational programmes. We may adapt those educational programmes that are of universal nature but should categorically avoid culture specific programmes. However, thrust should be not to copy but to evolve and create our own system that would suit our people and culture. Following measures are proposed for the purpose:

- (i) Research and development programmes be undertaken to develop appropriate technology to suit our educational functions
- (ii) Teacher orientation and training programmes be organised to train teachers to use this medium for distance learning
- (iii) Teaching packages on various subjects be prepared and disseminated through broad-

(Continued on page 4)

Need for a Change in Medical Teaching

M N Ghosh*

The teaching of modern medicine was started in India by the British some time in the mid 19th century. Medical colleges in Calcutta and Madras were established in 1835 and in Bombay in 1845. By 1946 there were 19 medical colleges and an equal number of medical schools in undivided India.

In 1946 the Health Survey and Development Committee (Bhore Committee) emphasized the need for expanding training facilities in modern medicine. In 1961 the Health Survey and Planning Committee (Mudaliar Committee) suggested guidelines for the training of doctors and establishment of medical colleges. Now, we have more than 100 medical colleges in India.

Phenomenal Rise

There has thus been a phenomenal rise in the number of medical colleges since independence. With this, however, there has not been much improvement in the quality of medical education. The medical teaching by and large continues to be the same as introduced by the British despite significant changes in the disease pattern and in the health needs of our people during the last three and a half decades.

At present we are producing fine young doctors who are more anxious about, and probably competent in diagnosing rare and complicated diseases for which perhaps no treatment is available, or are struggling to produce research papers and feeling frustrated at not being able to do so. Not many of them, however, seem to be much interested in, or good at, caring for a vast number of patients suffering from common ailments, or tropical diseases like malaria, amoebiasis and leprosy for which effective remedies are available.

The fault does not lie with them but with the present educational system. The young graduates are sometimes taught rare and complicated topics or methodologies, and probably examined on these, although no clinical situation can be identified on such activities. They have learnt to be proud of the knowledge they have acquired but not of its application. For instance they may have at their finger-tips the different types of urethral catheters, but may never have passed one even under supervision.

The general goals of the educational programme in medical colleges are well known such as producing a doctor who is well informed in medical science, skilled in the technique of diagnosis and therapy, and committed to the preservation of health as well as the alleviation of illness, both physical and men-

tal. The difficulty arises over the translation of such general goals into specific educational objectives. It is the initial step of formulating these objectives which is the most important and at the same time most difficult to deal with. But once this is done on the basis of the country's health needs, medical education becomes more relevant.

No single teaching method can serve all educational needs any more than a single drug can cure all diseases. More effective use needs to be made of teaching and learning methods, as also of the materials with greater emphasis on active learning than on passive teaching. A teacher should be a facilitator, he should facilitate learning and help students to acquire knowledge—that is, to understand, analyse, synthesize and evaluate, to acquire skills and to develop attitudes.

Present day evaluation usually focuses upon the educational products, that is, students, rather than the educational process. Examinations are among the least understood and most misused tools of education. Neither the examiner nor the student usually knows their exact objectives. What do our examinations really measure? Most of the studies undertaken to analyse this lead to the conclusion that in the main the examinations measure the recall of isolated facts. Our examination system has to be modified in such a way that it gives the maximum possible information both to the students and to the faculty about how successfully the educational objectives formulated in terms of clearly stated behavioural objectives are being achieved.

Since most teachers in medical colleges, though knowledgeable in their own disciplines have generally had little or no training in pedagogy, such training is necessary for the improvement of the education of the trainees. To accomplish this goal a regular training programme for health professionals will be needed. Since an enormous number of health professionals are to be trained not only in India but also in other developing countries, the World Health Organization suggested creation of a "multiplying effect in teacher training". At an inter-regional centre, the staff of a number of regional teacher training centres (RTTCs) are trained as educational specialists. Those at the RTTCs in turn provide special training for the staff of national teacher training centres (NTTCs) who will ultimately be responsible for instructing the teaching staff in respective countries. The South East Asia Region has two RTTCs, one in Peradeniya (Sri Lanka) and the other in Bangkok (Thailand).

The first NTTC for health professionals in India was established by the Government of India with WHO assistance in 1975 at the Jawaharlal Institute of Postgraduate Medical Education and Research.

*Ex-Director, Jawaharlal Institute of Postgraduate Medical Education and Research, Pondicherry

(JIPMER), Pondicherry The first national course on teacher training in educational science was held in 1976 with the help of three faculty members of JIPMER, who had undergone a course on educational science at the RTTC at Peradeniya, and two WHO short-term consultants. Since then regular courses of about 10 days' duration are being held twice a year, these are attended by some 20 teachers (from the level of lecturer up to the level of dean/principal) from different medical colleges in the country.

The general goals of NTTC are (a) training of teachers in educational science and technology, (b) development and application of the educational process such as educational planning, curriculum development, teaching techniques and instructional materials, and evaluation and (c) educational research.

Evaluation Methods

An analysis of the following studies shows that many of the teachers who participated in such courses have brought about some changes in the teaching/learning and evaluation methods in their respective institutes. These changes, however, could

be brought about much faster with more support and encouragement from the deans, principals and administrators. The most important change noticeable among the participants was the willingness to change. We should take advantage of this attitude and try to bring about a change in the present curriculum making it more relevant to the health needs of the community, the region and the country at large that the medical graduates are going to serve.

It is heartening to note that the Union Ministry of Health and Family Welfare has constituted a high powered committee, under the chairmanship of Dr Shantilal J Mehta, to go into the present system of medical education in its entirety and to suggest ways of making it more relevant to Indian conditions. It is to be hoped that this committee will give special attention to the subject of medical pedagogy. The effort, however, will not bear fruit unless the present examination system is modified according to a new concept of medical education relevant to the health needs of the community and the country.

[Courtesy—The Statesman]

INSAT-IB and Higher Education

(Continued from page 2)

casting as well as non-broadcasting modes. For this purpose 'Library storage' and transmission and dissemination facilities be established. Since the task is stupendous many institutions be involved in the task by adopting collaborative working based on democratic decentralization.

- (iv) Operating and maintaining the technology for continued service would pose a big problem. Training programmes for this purpose be started early. Since the technology would be used in rural areas also the trainee should be educated with multiple skills.
- (v) It is the past experience that benefits of modern development usually go to already developed urban centres and elite class. Specific policy and programmes be evolved to see that the benefits reach to disadvantaged regions and groups.
- (vi) Educational networking for research and developmental work at post-graduate level be taken up as the national educational task for giving information support to every scholar.
- (vii) Pilot programmes at a few places for 'mini-networking' be taken up with integrated approach and collaboration from various agencies connected with creation and dissemination of information.

Success of the pilot projects would help in building up national information network for educational and other purposes.

Establishment of the communication information network would radically change the functions and role of educational institutions and would provide learning opportunities to many. Adoption of these new functions essentially aimed at distance learning will open out the University dispersing the teaching-learning functions to all sections of society. Educational institutions have to play a great role in effecting this dissemination of teaching-learning—learning by participating in creating and developing hardware and software and also by watching and controlling their quality and standards and avoiding misuse and abuse of the national information network.

Since the new communication technology reduces personal contact and puts a machine between a student and teacher, we have to develop new techniques for this type of 'distance education'. Further, any system does not adopt innovation easily and would oppose the change by creating internal opposition, that would be effective, at least in the initial stages, till wider acceptability and credibility of the new technology is established. Wider orientation and participation practically on 'mass scale' is the way for the lasting success. □

Sixth New Delhi World Book Fair — A Report on AIU's Participation

The National Book Trust (NBT) was constituted in August 1957 as an autonomous organisation under the Ministry of Education to promote reading habits as one of the objectives. To inculcate this habit, publicity and promotion plays an important role. It has been accepted that the most effective measure for promoting books is book fairs and exhibitions. The NBT has made an effective use of this media in furtherance of this objective. Apart from arranging book fairs at regional and national levels, it has been organising World Book Fairs since 1972. Initially the World Book Fair was organised in response to a call by UNESCO to celebrate International Book Year. Later it was adopted as a regular feature every alternate year.

The Sixth New Delhi World Book Fair was held from February 4-14, 1984 at Pragati Maidan, New Delhi. About 1000 publishers from India and 100 from abroad displayed over five lakh titles in English and Indian languages. The Association of Indian Universities (AIU) arranged a collective display of AIU publications and those of the member-universities.

The World Book Fair was greatly appreciated by the book lovers and the book trade because it enabled the book lovers to browse over a large collection of books in one single place and also provided an opportunity for meeting and interaction with representatives of the book trade.

The titles displayed at the AIU stall were specialised publications covering the areas of agriculture, engineering, technology, medicine. Special mention should be made of the publication of Haryana Agricultural University and University of Roorkee.

Shri P.V. Narasimha Rao, Minister for External Affairs, visited the AIU stall on February 3, 1984 after inaugurating the World Book Fair. He evinced a keen interest in the publications and enquired about their market in other countries of the world.

Smt. Indira Gandhi, Prime Minister of India, also visited the AIU stall on 10th February 1984. She lauded AIU efforts in displaying university publications. She was of the view that all the universities should be represented in future Book Fairs and those which do not have sufficient publications may display posters and other information material on such occasions. The Prime Minister suggested that, at the next world book fair, a whole pavilion could be assigned for the publications of Indian Universities. She praised the lead given by AIU.

The other dignitaries who visited the AIU stall included Shri J.B. Patnaik, Chief Minister of Orissa; Dr. B.D. Sharma, Vice-Chancellor, North Eastern Hill University, Shillong; Prof. T.K.N. Unnikrishnan, Vice-Chancellor, University of Rajasthan, Jaipur; Dr. K.G. Deshmukh, Vice-Chancellor, Amravati University, Amravati; and Prof. Ram Lal Parikh, Vice-Chancellor, Gujarat Vidyapeeth, Ahmedabad.

The ninth edition of Handbook of Medical Education was released on February 14, 1984,

the concluding day of the Book Fair, by Commander Sat Bir, Commissioner, Kendriya Vidyalaya Sangathan, New Delhi. The effort of the Association to bring these handbooks for the guidance of +2 students desiring to pursue professional courses like medicine, engineering, agriculture etc. was commended. He felt that such informative handbooks should be purchased by the libraries of all Secondary Schools and also made available to students who wish information on career guidance.

By all accounts the display of AIU and University publications was praiseworthy and received favourable mention in the newspapers. The AIU stall was shown on the TV thrice while covering the inaugural function, reporting the visit of Prime Minister, and the final round up.

Several suggestions were made by the visitors. Most of them impressed upon the need for a catalogue of publications of all the universities. They all stressed the desirability of making available all the publications of Indian Universities under one roof. Once accomplished these measures would boost the sale of university publications and encourage the universities to strengthen their publishing programmes.



Commander Sat Bir (right), Commissioner, Kendriya Vidyalaya Sangathan releasing the ninth edition of Handbook of Medical Education

XLIV Session of IHC held at Burdwan

The Forty-fourth session of Indian History Congress (IHC) was held during 22-24 December, 1983 at Burdwan University. It was organized within less than a month's time. A pity that due to certain unavoidable circumstances this forty-fourth session of the IHC could not be held at the Guru Nanak Dev University of Amritsar, the originally-fixed venue. It had to be shifted at the very last moment to Burdwan University.

The IHC was established in 1935 and today it has a membership of over 3300.

The Inaugural session of the Congress was organised at the Burdwan Health Fair Pandal at the Rajbati campus on 22nd December and was inaugurated by Shri A.P. Sharma, Chancellor of the University and Governor of West Bengal. Promoting the activist concept of 'the present as history', he described history as 'a guide to action' for

'History as I see it, is not merely about the past. In the stream of history the past flows into the present and the present unfolds the future. In this three-dimensional critique of life, history is like a note of music. It is, as Walter Landor told us long ago, nothing but as it appertains to what is past and what is to come. It is the present, as some would say, which is history. In other words, we need history, not merely to understand the past

but to understand the present and thus to *change the present*'.

In his address welcoming the delegates, the Vice-Chancellor of the University analyzed the cultural specificities of the region served by Burdwan University—the *Radh* Bengal. He also called for a unity of *loka* and *lokottara* knowledge in historical work.

Speaking of history as not merely an account of the heroes and the great men but as a record of mass social changes, Professor Sambhu Ghosh, West Bengal's Minister for Higher Education, who attended the Burdwan session of the IHC as the representative of the State Government, said that even today most of the history syllabuses betrayed a colonial heritage and urged the historians present to battle for a scientific syllabus of history.

In her address as the General President of the session, Professor (Miss) Romila Thapar made a perceptive survey of the new trends in the historiography of ancient and early medieval India. The study of these periods, she said, called for new concepts and/or a considerable refining of the existing concepts including such terms as those of tribe, peasant, *varna*, 'jati' etc. In an apparent aside against mono-causal historical expositions, Dr. Thapar concluded: 'The relating of ideol-

ogy to historical reality can result not only in new ways of examining a historical situation and be used to extend or modify the analysis from other sources but can also help in confirming the reality as derived from other sources. (It might also stir the still waters of contemporary interpretations of early Indian thought.) Such a study, incorporating elements of deconstruction, would sharpen the awareness of concepts and theoretical frameworks.'

The academic meetings of the Congress were spread over the three days of the conference. More than 600 delegates attended the session and about 200 delegates directly contributed research-papers. Apparently inspired by Perry Anderson's renegade Marxian view that 'pre-capitalist modes of production cannot be defined *except* via their political, legal and ideological superstructures' since these are what determine the extra-economic coercion that specifies them, Dr B.D. Chattopadhyay of Jawaharlal Nehru University made out in his Presidential Address to the Ancient India Section of the IHC a strong case for the study of politics and polity in early medieval India, not in the traditional manner, not in the form of isolated and segmented units in ritual terms nor by the notion of feudalism nor by the dichotomy of centralization-versus-decentralization but in terms of the State formation and the



Shri A.P. Sharma (right), Governor of West Bengal & Chancellor of Burdwan University, who inaugurated the XLIV Session of Indian History Congress.

continuous extension of State society, in terms of what has been called 'integrative polity'. Professor Y. Subbarayalu of Thanjavur presided over the Section on Historical Archaeology Epigraphy & Numismatics and Professor Bhagwanadas Gupta over the Section on Medieval India. While Professor Amalendu Guha of Calcutta, as President to the Section on Modern India, spoke on Nationalism Pan-Indian & Regional in a Historical Perspective. Professor Dwijendra Tripathi of Ahmedabad presiding over the Section on the countries other than India, said that the study of non-India history in this country had miles to go.

Other interesting highlights of the Burdwan session of the IHC included a special lecture by Gen'ichi Yamazaki on the current state of study on ancient Indian history in Japan and a symposium on Tribe & Caste in Indian History. The Urban History Association of India also presented a symposium to which Professor Irfan Habib of Aligarh and Professor Ravinder Kumar of New Delhi contributed two interesting papers.

The members of the IHC elected Vice-Chancellor J.S. Grewal the noted historian of Punjab as the General President of the next forty-fifth session. A sixteen member Executive Committee was also elected.

The cultural items offered to the delegates on the occasion of the Burdwan session of the IHC were also highly valued. The Bengali drama 'Last Seven Days of Julius Caesar', presented by Calcutta's Theatre Commune thanks to the generosity of the Burdwan Committee for Rural Health was liked by one and all while the music-cum-dance portrayal of the Six Seasons of India, by courtesy of Padmaja Naidu College of Music, earned a hearty applause. This latter event was described in the official statement of the IHC management as 'a rare experience'.

All in all, the Burdwan session of the IHC caused quite a few ripples, it was, on all counts, a great success. And this, despite the fact that the University was not called on to spend a great deal of money.

Seminar for teacher educators at Gujarat Vidyapith

A state level seminar for the teacher-educators working in the colleges of Gujarat State was organised in the Gujarat Vidyapith during 16th & 17th January 1984. Dr K.E. Bugge Professor of Education, Royal Danish School of Educational Studies worked as a resource person. 19 Teacher educators participated in the seminar. Public lectures on Grundtwig and Contemporary Educational Thought were organised as a part of the seminar.

Educational problems were discussed in the light of the keynote paper from Professor Ram Lalbhai Parikh and Dr K.E. Bugge. The points of discussion were language and education, child centred education, Gandhian ideas self reliance conscientisation and the new Marxism.

The Folk High School move-

ment in Denmark was discussed and the participants got enriched from the lectures of Dr K.E. Bugge.

The second part of the seminar was organised as Perspectives of Teacher Education curriculum. 24 Principals of colleges of Education in Gujarat State attended the seminar on 6th & 7th February 1984. The curriculum improvement programme based on NCTE framework for teacher education curriculum was discussed at length. Dr Torben Krog, Principal College of Education, Copenhagen, Denmark participated as a resource person. He delivered a public lecture on Perspectives of Teacher Education in Scandinavia with special focus on Denmark. Dr Torben Krog discussed the concept of the comprehensive school the concept of Gymnasia preparing teachers for folkeskole, requirement of admission, four years curriculum, Education for quality, Education as an investment, the role of Royal Danish School of Educational Studies Education & Research. The Vice-Chancellor, Prof Ram Lal Parikh inaugurated the seminar.

ASSOCIATION OF INDIAN UNIVERSITIES

Correspondence Courses

Applications are invited from college/university teachers for admission to three Correspondence Courses in Evaluation Methodology And Examinations at Basic, Intermediate and Advanced levels of six months duration from 1-4-1984 to 30-9-84. Basic level course is offered from Regional Centres at Delhi Bombay and Madras. A personal 'Contact Programme' for three days is planned and prescribed books will be supplied to every candidate.

Requests for prospectus and application forms accompanied by a crossed Indian Postal Order for Rs. 5 - drawn in favour of Secretary, Association of Indian Universities, and a self-addressed stamped envelope (Re 1) should reach the undersigned. Last date for receipt of application in the prescribed form is 15th March, 1984 for non-sponsored candidates and 30th March, 1984 for sponsored candidates. For sponsored candidates, Universities/Institutions can pay the course fee and travel expenses for contact programme from UGC unassigned grant.

Project Director (Examinations)
Association of Indian Universities,
6 DDA Building, Nehru Place
New Delhi-110019

Indian Association for Educational Technology meets in Bhopal

The Indian Association for Educational Technology (IAET) held its 16th Annual Conference at the Technical Teachers Training Institute, Bhopal, from 14th-16th January, 1984. The theme of the Conference was 'Distance Education in the Third World Countries'. Papers were invited on the following aspects:

- (1) Concept of Distance Education,
- (2) Curriculum Designing for Distance Learning System
- (3) Distance Education System in India & abroad
- (4) Mass Media in Distance Education
- (5) Evaluation Techniques

One hundred and eight participants from different institutes, universities participated. The conference was inaugurated by Dr John S Daniel, President of the International Council for Distance Education. In his presidential address, he traced the history of Distance Education from the year 1969 when Open University was established in the United Kingdom. He further added that Open Universities are growing fastly in Asia. He quoted in this regard the experiences of China, Japan, Korea and the recently started Open University in India at Hyderabad. He quoted the Study done by Bates which showed that broadcasting had less impact while the conglomeration of different Media proved to be very effective. He concluded his address by saying that autonomous institutions offering distance education have done a good work compared to the other institutions which are under the grip of the parent organisations. Dr G B Shah, President of IAET in his inaugural address stressed the need for introducing different technology suited to the local conditions. He underlined the need for taking urgent steps in this direction in the light

of launching of INSAT-1B.

In the afternoon of 14th January 1984 two parallel sessions were held under the following heads:

- Group I—Concepts, principles, procedure and effectiveness of distance education system
- Group II—Distance Education System in India & abroad

Of the nine papers presented in Group I, mention may be made of the paper entitled 'Cost Effectiveness of Distance-Learning System in Technical Education System' by Dr V S Vaidya, Coordinator of TTTI's Extension Centre at Pune. The paper showed with facts and figures that the cost effectiveness of distance education was good. From among the six papers presented in Group II, the paper by Mrs Gomathi-mani entitled 'Distance Learning Phenomenon—a Trend' argued that distance education run by commercial organisations were effective.

On 15th January 1984 a symposium on Educational Technology for Non-formal Education was held in which Dr Shah, Dr S S Kulkarni, Dr D L Nuttal of U.K. Open University and Mr Pande from Doordarshan Delhi participated. Mr Pande during his talk said even though AIR Doordarshan services were offered to the teaching community they did not utilise the opportunity fully. Dr S S Kulkarni at this point suggested that the participants who can produce programmes for different media may be identified and a Register may be maintained by the Association. Dr Nuttal briefly explained the programmes and the activities of U.K. Open University.

In the afternoon two parallel sessions were held. They were Group III—Mass-media in distance education system and

Group IV—Case studies in distance education system. In Group III there were altogether 8 papers and in Group-IV there were 7 papers. The paper entitled 'Role of INSAT in rural education' by Dr S P Malik was very informative. In Group IV Dr N K Banthiva presented his paper entitled 'Training for writing for distance education' in which he highlighted the various aspects of writing material for distance education. Mr K Gunasekaran, Research Officer AIU presented the following two papers:

- (1) Mass Media in Distance Education: Perspective and Problems and
- (2) A case for introducing innovations at the summative evaluation by the institutions offering distance education.

Mr P K Malhan, Research Assistant AIU presented a paper on 'Distance Education: A Perspective'.

On 16th January 1984 there was a general session in which the reports from various groups were presented. The salient recommendations are: (1) The Institutes of Correspondence Education (ICE) should be given autonomous status. (2) Distance Education should be utilised to upgrade the professional growth of the teachers. (3) Appropriate mix of the media has to be followed in distance education. (4) Local need-based programmes had to be developed. (5) Training has to be given to the people interested to use different mass media. (6) Radio Television should be used effectively. (7) Formative and Summative Evaluation system have to be made more effective.

It was announced that the 17th Annual Conference of IAET will be held at Bombay and the theme of the conference will be 'Media Technology and Management of Learning'. Dr S S Kulkarni of NIBM also informed that there will be a workshop at Bombay during this year to train people to produce programmes using different media. □

Dr. Khoshoo Addresses Convocation of Poona University

Excerpts from the convocation address delivered by
Dr. T.N. Khoshoo, Secretary to the Government of India,
Department of Environment, at the University of Poona

“ Long ago, the Father of the Nation warned us that “Democracy comes naturally to him who is habituated normally to yield willing obedience to all laws, human or divine.” He said “I value individual freedom but you must not forget that man is essentially a social being. He has risen to his present status by learning to adjust his individualism to the requirements of social progress. Willing submission to social restraint for the sake of well-being of the whole society, enriches both the individual and the society of which one is a member.”

“A nation's social and political fabric depends entirely upon the

is simple. Do we succumb to the tendency for defiance of law when democratic channels are open to us? If we do not, we cannot realise the objectives of being “the high-protecting power of all knowledge of science, of fact and principle, of enquiry and discovery, of experiment and speculation.” We must have the courage of our convictions to face the situation frankly and squarely. It is high time that the silent majority faces the unruly in an orderly manner. On the eve of our independence, Prof. Eric Ashby described the Indian universities as a “massive invalid” which does not respond to any simple treatment. It is you, my young friends,

Convocation

respect it engenders for its constitutional framework and the laws of the land. However, unfortunately, even in the universities, the atmosphere is often surcharged with disregard and disrespect for law and order. Mercifully, it is only a handful who generally subscribe to this kind of approach. Yet it is they who hold the society literally to ransom. The majority are like silent spectators, a matter of no comfort, for let us not forget that silence is half admission. Should such a situation be allowed to continue? Should the good elements in society be timid and leave the ground open for the unruly to rule the roost? These are basic questions which we all have to ask ourselves and seek solutions to in the larger interest of our society and the nation as a whole. The matter

who have the biggest stake and the utmost responsibility to set things right. The basic question is, can we make tomorrow's India without involving today's youth?

“Importance of education in the progress of the country is clear from a Chinese proverb, which says

‘If you are thinking one year ahead, plant rice,

If you are thinking 10 years ahead, plant trees, and

If you are thinking 100 years ahead, educate the people.’

“Let us follow this in whatever way we can as it will solve many of our problems of food, fuel, fodder, fertilizer and fibre, of environment and development, and above all of removing ignorance and irrationality. The

role of education, higher education in particular, is to provide the high level of manpower for managing our country. This is a critical input to any worthwhile development and socio-economic change. If higher education is to fulfil this role, it has to be of the highest quality aimed at bringing about harmony and discipline in society as well as providing the professional and technical excellence needed for this purpose. One of the biggest dangers to our educational system is posed by influences extraneous to the university. Such influences must be kept under proper control and should, in no case, be allowed to have anything to do with the selection and promotion of faculty members. Let us realise that a wrong appointment in a university is bound to spoil generations of our students. The highest priority must be accorded to the quality of the faculty. After all, who makes discoveries or inventions, is it the individual or the university? Another disturbing trend is too much of inbreeding in most universities and in some it has reached alarming proportions. Youth needs proper guidance and channelisation of the latent energies along constructive and productive directions. Therefore, we need teachers of quality who can keep pace with the tremendous increase in the quantum of new knowledge and the added responsibilities towards the society as a whole. Given good teachers and students, good training and motivation will follow, thus helping the students in creative pursuits.

“It is well-known that in recent years there has been phenomenal, but wholly uncontrolled, growth in college and university education in our country. This has taken place mostly without due regard for qualitative improvement and provision of adequate opportunities for placement and absorption of trained manpower. Thus, while the percentage of literacy may have risen, not much has been achieved by way of quality of education. Mediocrity has set in and this will affect the whole fabric of our country. Unfortunately, whenever there are stres-

ses and strains on our national economy, one of the first casualties has been the educational sector. Let us realise that expenditure on education is not expenditure but actually investment of the highest order. With the rapid expansion of the educational system, the resources have been spread too thinly and most of the support is at a sub-critical level. Such support is in effect counter-productive and has been so manifest.

"There is yet another facet. We talk of the autonomy of universities, but unless finances are guaranteed, true autonomy is not feasible. Besides, unfortunately, many universities are more rule-ridden than even the Government. At the same time, autonomy does not mean licence or freedom to act irresponsibly.

"While rapid expansion in higher education has made it available to several sections of our society, which did not have such opportunity before independence, it has also increased unemployment. Even so, there is acute shortage of manpower in several fields of science, technology and management. At present, while for the job of a clerk there are likely to be hundreds of applications, there may be none whatsoever for a technical position. Years ago, Swami Vivekanand had aptly remarked that our system was pre-eminently suited for a type of 'clerk making education'. It is obvious that education needs to be made truly relevant to the society. The system needs restructuring. When we do this, let us not forget our traditions and our particular historical, cultural, religious, philosophical, social and economic milieu, and at the same time let us also not be oblivious to the fact that we are in a scientific and technical age. Furthermore, while Indian scholars compare very favourably with their counter-parts abroad, the significant difference in their functioning is seen in matters of fiscal inputs and coordination in the area of education and training. Unfortunately, coordination and collaboration are still not a part of the general scientific and educational scene, but wherever this

has been possible in India, the results have been very impressive. We are supposed to have the third largest scientific and technical manpower in the world and at the same time we have the maximum adult illiteracy.

"We attained our political freedom, when many of you, who are graduating today, were not even born. But, please remember that India is still not free from want and hunger, from malnutrition and disease, from illiteracy and ignorance, from poverty and socio-economic inequality, and from lack of the basic amenities of life to which every citizen is entitled. It is my unshaken belief that the university system can be a source of great strength to the nation in overcoming all the difficulties and in providing impetus in economic development as also the restoration of our moral and spiritual values. You have before you the contribution of our scholars and the illustrious alumni of the universities, in building the present India. The university system can be the most powerful instrument in the upliftment of our country as education is the bedrock of all progress and we have to do whatever we can to strengthen it. Universities need proper nurturing and their ailments should be cured expeditiously. Given this, they may play the role required for making scientific and technical progress from which will follow economic development as well as social order and national integration. The younger generation has a tremendous responsibility in this direction.

"It is human nature to view the past as glorious, the present as indifferent, and the future as bleak. While there may be cause for concern, there is no need for pessimism. One does get a mixed feeling, of anxiety as also of confidence. The anxiety is on account of the falling standards, while the confidence is born out of a realisation that all is not lost. The academic lights will never be out, they may be engulfed in a thick fog or mist. The change in weather is on the horizon, the sky will clear and with understanding, perseverance and dis-

cipline and a measure of sacrifice, the academic lights will again shine and bring glory to our country.

"Our country has been referred to variously—a land of contrasts, a functional anarchy, a country where contradictions co-exist, and so on. The fact remains that we are at the cross roads. We have at one end of the spectrum the near stone age, and on the other the space age cultures, with everything in between. All these co-exist happily and go on side by side. This, I feel, is our great strength. This makes India relevant to the most underdeveloped as also to the most developed countries. Rarely in any country do we see such diversity as also opportunities and threats. Diversity is the strength of all living systems, and once lost the system is on its way out. This has universal application. However, no Government can do everything by itself. The student community is an unutilized or under-utilized resource. The educational system, particularly the university students, can play an important role in harnessing public opinion. Students are also critical to our development and spread new ideas, new experiences by talking to their teachers, parents, brothers, sisters and friends, which has a multiplier effect. In fact, teaching and training, research and development, and extension, form a single package. Our universities generally concentrate on the first two items only and have done precious little about the extension of knowledge outside their campuses. Thus the fruits of knowledge remain away from the places where they are needed the most. It is most gratifying to note that Poona University has taken tangible steps in this direction, thanks to the forethought and vision of the university management.

"With these points in mind, I would now like to say a few words about the University Community and Eco-development Programme. Eco-development aims at economic development in harmony with ecological balance and the betterment in the quality of life of our people. This ap-

proach calls for development without destruction through active public participation. The student community could be the major component of the work force which needs to be trained and geared to take Eco-development programmes based on "learning by doing". To create the necessary awareness among the students, the Sixth Five Year Plan envisaged active participation of the universities and scientific institutions in national development with a three-pronged strategy

- (1) Creating an awareness in the youth for conservation and enrichment of environmental assets through learning by doing. These programmes should be given proper academic recognition and credit thereby generating a

new value system in educational programmes,

- (2) University research programmes should increasingly come close to the local environmental problems, and
- (3) Universities located in similar biogeographical provinces should participate in co-ordinated programmes of action-research

"Eco-development programmes open up vast opportunities for employment generation for the youth provided that the following adjustments/modifications are incorporated in the existing university procedures and curricula

- (1) Due academic credit is given to Eco-development programme and field work, and
- (2) Under this programme, there is a shift in research priori-

ties with emphasis on *application* rather than on pure research

"Involvement of non-university youth and the public at large in programmes of Eco-development can also be ensured by exploring the possibility of taking up eco-development programmes under the "Employment Guarantee Scheme" In Maharashtra, the tree plantation taken up during the Eco-development Camps held by university students is maintained and looked after during summer season by casual labour employed under the "Employment Guarantee Scheme". Constructive participation of students during holidays and survival of planted saplings during critical summer months through daily wage labour provides a good example of collaborative effort." □

CALENDAR OF EVENTS

Proposed Dates of the Event	Title of the Conference/Seminar/Symposium/Workshop	Objective	Name of Organising Department	Name of the Organising (Chief Guest, Secretary/Keynote Officer to be contacted)	Remarks
March 9-10, 1984	Symposium on Progress of Science and Technology in Uttar Pradesh	Exposing the Technological endeavour made in the State and its impact on Socio-economic Development	U P Council of Science & Technology and the University of Roorkee	Dean, Research & Industrial Liaison	Symposium likely to be inaugurated by Shri Sripat Mishra, Chief Minister, U P
March 5-9, 1984	International Symposium on "New Vistas in Organometallic Chemistry"	To focus the recent developments in the area of Organometallic Chemistry in form of Plenary lectures, Research paper presentation and to discuss and identify the thrust area in Organometallics particularly in the national perspective	Chemistry Department, University of Rajasthan, Jaipur	Prof R C Mehrotra, Chemistry Department, University of Rajasthan, Jaipur	19 outstanding Organometallic Chemists of the world are participating in the symposium
March 9-11, 1984	Seminar on Commonwealth Literature	To focus attention on the major genres and themes in Commonwealth Literature	Department of English, Marathwada University, Aurangabad	Dr V R N Prasad, Reader in English, Marathwada University	Senior teachers of English and research scholars are expected to participate

Madras University organises workshop on minimal examination reforms and restructuring of courses

The University of Madras that pioneered introduction of several major areas of examination reforms like Internal Assessment, Semester System, Grading and Question Banking over the years had to give up Internal Assessment and Semester System due to pressure from teachers and students. Now the university is keen to implement minimal examination reforms in the areas of restructuring the syllabi, introduction of changes in paper setting pattern of question papers and changes in the conduct stage of examinations. A 3-day workshop to consider all these issues was held between 9th and 13th February, 1984 which was attended by Chairmen and Members of Boards of Studies in Sciences and Medicine, Boards of Examiners, Members of the Syndicate, Principals of colleges and senior teachers of the university and affiliated colleges.

Inaugurating the workshop, Dr P. Thirugnansambandam, Director of Collegiate Education, reiterated that the syllabus in universities was grandiose and impressive on paper but lacked clarity and completeness. He also called for teachers and students to make better use of library facilities. Dr S.P. Shanmuganathan, Dean, College Development Council welcoming the participants suggested that the group must consider seriously all the issues related to pre-conduct, conduct and post-conduct stages of examinations and make specific recommendations to university authorities to implement them. Prof V. Natarajan, Project Director of AIU pointing out that the minimal examination reform outlined first by the Mahabaleshwar Conference (1980) when all Examination Reform Unit Universities for the first time gathered to exchange their experiences, outlined practical

guidelines for implementation of several areas of examination reforms suggested by UGC.

There were in all nine sessions each session devoted to either presentation of papers or discussion in groups to consider specific issues. In the first session, Prof Natarajan presented the theme to get the workshop to business by elaborating on minimal reform programme of Mahabaleshwar and UGC documents. There were papers dealing with restructuring the syllabus, the need for establishing curriculum development cell, paper setting and other activities of the pre-conduct stage issues related to conduct stage of examinations and finally, issues related to post-conduct stages. In all nearly 20 papers were presented which provided the background information for different groups to discuss them and come up with specific recommendations. There were four groups dealing with curriculum development and syllabus restructuring, pre-conduct stage, conduct stage and post-conduct stage of examinations.

After thorough deliberations several recommendations have been made. Some of the recommendations are

- (1) establishment of a curriculum development cell at the university to coordinate the work of curriculum development in different disciplines in a few select colleges with the help of Task Forces in each subject.
- (2) to develop restructured courses in the form of foundation, core, allied and application oriented subjects suggested by Task Forces and framed by respective Boards of Studies,
- (3) to prepare 3 sets of papers in every subject by a team of paper setters who will have recent teaching ex-

perience in these subjects. The Board of papersetters also will moderate the question papers before their choice,

- (4) to prepare formats for registration of candidates for examinations for the consolidation in the examination section and finally, allocation to different examination centres,
- (5) to take steps in the form of statutes to make unfair means in examinations a recognisable offence and to give effect to the schedule of punishment for different types of unfair means as formulated by the Syndicate from time to time.
- (6) to continue to adopt central evaluation to speed up the process of marking and announcement of results.
- (7) to initiate studies on reliability and validity of these examinations from an analysis of the performance of candidates,
- (8) to continue the re-evaluation as adopted now in the university and also incorporating various provisions of the report on re-evaluation accepted by all universities during the 59th Annual Conference of AIU at Annamalai Nagar.

It was decided to circulate the entire proceedings of the workshop and the recommendations made to all the affiliated colleges to enable them to discuss thoroughly and suggest modifications if necessary. Once this is done, the university authorities will implement them within 2 years.

Annual conference of Nagpur and Amravati Universities English teachers' association

The Annual Conference of the English Teachers of Nagpur and Amravati Universities was recently held at Sardar Patel College, Chandrapur, Maharashtra. The President of the Association, Dr O.P. Bhatnagar of Vidarbha Mahavidyalaya, Amravati, projected the activities

of the Association in the rural areas to fill the gap that exists between the rural and urban performance and efficiency in English. In his presidential speech, Dr Bhatnagar asserted that if English is to stay it will have to be taken care of more in villages than in the towns. And as such the teacher of English will have to work outside the classroom as part of the social extension of his subject in a purposeful demonstration of the relevance of English for the masses. In his speech he decried the present elitist modes of the College and University Teachers of English in regarding themselves as a class by themselves attending seminars and conferences in five star conditions in India and abroad to the utter neglect of their national commitment to masses. English, he held, was a very vital area of operation and technique in uplifting the rural mind and modes to suit the modern times and as such it requires great devotion on the part of the teachers of English to strengthen it in the rural areas. He therefore exhorted the teachers of English to work on summer-orientation programmes on a voluntary basis amply demonstrated by the Association by its activities during 1983-84.

The Conference was inaugurated by Dr K G Deshmukh, Vice-Chancellor, Amravati University with Dr G B Kadam, Vice-Chancellor, Nagpur University presiding over the inaugural function. The Conference was hosted by the courtesy of Shri Shantaramji Potdukhe, Member of Parliament, at Chandrapur, and attended by a large number of social, educational and political dignitaries. The general keynote address was delivered by the former Reader in English and leading Marathi critic Prof P W Urdhwareche of Pune and the academic keynote address was delivered by Dr S M Pandeya, Professor of English, Banaras Hindu University, Varanasi.

The general sessions were followed by Paper Reading Sessions and Group Discussions on Syllabi and Courses in English

in the region. An exclusive session on the recitation of poems by the practising poets was also organised, including students participation in it. Both students and teachers received various prizes and were felicitated for their performance in English. It is for the first time that the students securing the highest number of marks in English at all the levels of University Examinations were felicitated by a teacher organisation. A blind student, G W Lade, received a prize for successfully completing his M A in English in Second Division. Awards were distributed to teachers under various heads like—Best Paper Award, Active English Teacher Award, Active Association Member Award, Two Best Poems Awards and Two Best Short Stories Awards.

Marathwada University's international conference on biology of benthic marine organisms

An International Conference on Biology of Benthic Marine Organisms was organized by the Zoology Department of Marathwada University, Aurangabad from 20 to 24 January 1984. As many as 50 papers were presented at 6 sessions devoted to Physiology (7), Endocrinology (5), Productivity (6), Ecology (16), Mariculture (5) and Pollution and Biofouling (12). Amongst the contributors were scientists mainly from India (60), U S A (40) and 15 scientists from other countries such as Pakistan, United Kingdom, Brazil and Venezuela.

Hon'ble Union Minister for Science and Technology and Ocean Development, Mr Shivaraj Patil delivered the inaugural address for the conference and Dr S Z Qasim, Secretary, Department of Ocean Development, delivered the Keynote address mentioning the prospects and importance of investigations on the benthic marine organisms, which are potential sources of food for man. Dr C V Kurian of University of Cochin, in his address, dealt in detail, the research work

going on in various Institutes along the coastal regions of India on Benthic marine organisms. He also added the importance of these organisms in the food chain of marine environment.

This International conference was organized jointly by American Institute of Biological Sciences (AIBS) and Office of Naval Research (ONR), Washington, from U S A, Zoology Department, Marathwada University, University Grants Commission (UGC) and Department of Ocean Development, India. Prof R Nagabhushanam, Marathwada University and Dr B J Zahuranc, Office of Naval Research, Washington were the Chairpersons for the conference. Prof Nagabhushanam welcomed the participants and narrated, in brief, the aims of the conference. Dr Zahuranc, ONR, Washington, mentioned about ONR joint projects with Indian Universities and C S I R Laboratories for future research activities.

The deliberations which took place through different sessions on various topics gave information regarding the physiology, endocrinology and ecology of benthic organisms and their importance in mariculture. Discussions on each paper shed light on novel technologies which can be applied universally in studying the benthic organisms of both tropical and temperate environments.

The concluding session of this conference was held on 24 January 1984 and was presided by Dr S A Meer, Counsellor for Science and Research, American Embassy, New Delhi.

Seminar on accountancy at B J. Commerce College

A six-day seminar of teachers of Accountancy in Gujarat was organised at B J Commerce College, Vallabh Vidyanagar under the COHSSIP programme of U G C. Current topics like Accounting standards, Inflation Accounting, Criticism of Published Accounts, Responsibility Accounts, Marginal Costing, Integrated Accounting

Systems and Teaching Techniques etc., were deliberated by the faculty

42 delegates participated in this seminar who came from different universities of Gujarat

Gurukula Syndicate meets at Delhi

A meeting of the Syndicate of Gurukula Kangri University was held in New Delhi on 11-2-1984 under the presidency of Sri G B K Hooja, the Vice-Chancellor of the University. At first the two new members Professor R L Parikh, Vice-Chancellor, Gujarat Vidyapith and Shri R S Chitkara were welcomed.

The Syndicate accepted the promotion scheme as formulated by the UGC. The following important decisions were taken by the Syndicate:

- (1) To celebrate the Platinum Jubilee of the University in 1984
- (2) Full development of Gurukula Kangri Village will be made under the 20-point programme of the Prime Minister Smt Indira Gandhi
- (3) Starting of a Certificate/Diploma course in Tamil language
- (4) Approval for 30 Centres of Adult Education

More staff quarters at Karnatak University

Hon'ble Sir S R Bommai, Minister for Industries, Government of Karnataka laid the foundation stone of the Staff Quarters on the Karnatak College as well as the University Campus on 26th Jan. The University has, with the assistance of the H D F C, taken up the construction of sixty additional staff quarters. He addressed the students and staff of the University later. In a frank and forthright speech, Sir Bommai analysed the situation in the Universities to-day and felt that Universities should enjoy autonomy. He said that the Universities should primarily attend to developing an

attitude of rational and fearless thinking on the part of the students. This would lead to the creation of a strong public opinion which would, among other things, help cleanse the present corrupt political atmosphere, he said.

Dr Nanjundappa, Vice-Chancellor, who presided, welcomed the guest earlier and listed the achievements of the University.

American Centre gifts books to Karnatak University Library

Some 150 recently published books worth around Rs 30,000/- on a variety of topics were gifted to the Karnatak University Library by the American Centre, Madras, on 8 February. The books, which were formally handed over by Ms Patricia Norman, Vice-Consul, had been exhibited earlier under the theme 'Scholarly Publishing in America'.

Dr D M Nanjundappa, who received the books on behalf of the University, said that this gesture of goodwill, especially in the sharing of knowledge, is yet another proof of mutual respect between the two countries. Ms Norman expressed great pleasure at the spontaneous affection the people of Karnataka showed towards the people of the United States.

UGC Official Dead

Shri A B Gupta, Deputy Secretary, University Grants Commission died on February 23, 1984. He was suffering from acute leukemia for the last two years.

Keeping in view the wishes of Late Shri Gupta, his eyes and body have been handed over to the All India Institute of Medical Sciences, New Delhi for medical use.

News from Agric. Universities

Seminar on agricultural resources and crop production

Dr A S Atwal, Dean of Postgraduate Studies and Director of Ecology, Forestry, Agro-meteorology and Plant Protection of the Punjab Agricultural University, inaugurating a two-day seminar on agricultural resources and crop production at the PAU recently, said that food production was to be increased considerably to feed the rapidly increasing population of the country. This would need more land under cultivation, more resources to be harnessed and more inputs to be applied.

Sponsored by the Indian Council of Social Science Research, the seminar was attended by more than 100 delegates from Punjab, Haryana, Himachal Pradesh and Jammu & Kashmir.

Dr Atwal said that the soil fertility should be maintained

since the soil was getting deficient of micronutrients. Proper management of land and water resources should be practised and the problem of water logging should be solved by planting suitable type of trees and organising a drainage system.

In his welcome address Dr Mavi, Head of the Department of Agro-meteorology of the PAU, explained the objectives of the seminar and said that the potential and conservation of land, soil, water, climate resources and the strategies for the utilisation in optimising crop production would be discussed. Dr Mavi said that apart from an increase in reckless exploitation of underground water resources, the efficiency of water use of both underground and surface water was low. He deplored that vast stretches of land had been rendered unproductive because of salinity, acidity, water logging and soil erosion.

Dr G S Gill, Dean of the College of Agriculture, in his presidential remarks suggested that such seminar should be held at state and national level and specific recommendations made to the State and Union Government

National conference of the Indian Phytopathology Society at HAU

It is imperative that plant pathologists should adopt an integrated approach in treating various virus and other diseases in different crops, said Mr L D Kataria, Vice-Chancellor, Haryana Agricultural University (HAU), while delivering the Chairman's address at the inauguration of the 36th National Conference of the Indian Phytopathology Society organised at HAU recently

Mr Kataria exhorted the scientists to avoid "compartmentalisation" in treatment of plant diseases and to suggest treatments which are economically viable. He said that plant pathology had acquired greater importance because the high yielding varieties are more susceptible to the diseases both old and new.

Dr J N Chand, the Chairman of the organising committee disclosed that the theme-subject of the meet will be chemical control of plant diseases.

Dr K D Paharia, Plant Protection Advisor to the Govt of India, inaugurated the conference.

250 scientists from all over the country participated in the 3-day conference.

Symposium on Chlamydiosis

"The research methodology evolved by veterinarians for the treatment of different animals should be need based and location specific", said Shri L D Kataria, Vice-Chancellor Haryana Agricultural University (HAU) while addressing the first National Symposium on Chlamydiosis which is a common problem amongst animals and men. Shri Kataria

said that it was necessary for the extension centres to work more aggressively for making the research achievements available and applicable to the ordinary farmers because the small, marginal and landless farmers' economy depended primarily on his livestock wealth.

Dr R M Acharya, Deputy Director General, Animal Sciences (ICAR) who inaugurated the seminar said that chlamydial infections were assuring the status of an important and emerging disease both among animals and men. The causal agent is responsible for multiple clinical syndromes such as pneumonia, polyarthritis, encephalitis besides other conditions in domestic animals and trachoma and abortions in humans.

The symposium in which about 55 specialists from all over the country participated was the first of its kind in the country and was organised under the auspices of the University Grants Commission (UGC).

Trials with new phosphate fertilizer

Pasture experiments carried out in Australia show that a new type of phosphate fertilizer based on Queensland rock phosphate, holds promise.

The Victorian Department of Agriculture has been conducting preliminary assessment of this experimental fertilizer, produced by a new process developed by the CSIRO for Queensland Phosphate Ltd. Trials have also been conducted in Queensland and in the Australian Capital Territory.

The new material known as dical-super, contains phosphorous that is citrate-soluble, instead of the water-soluble phosphorus in superphosphate. Dical-super contains more phosphorous and less sulphur than superphosphate.

The department's senior pasture specialist stated that when dical-super and superphosphate were applied to pots of phosphate-deficient soil at equal rates of phosphate, the response of sub-clover to the dical-super was equal to or better than the response to superphosphate.

Research in the department's laboratory found that dical-super did not have the harmful effect that superphosphate had on inoculated clover seed.

"When the new fertilizer process is developed to pilot-plant stage the product will be assessed more comprehensively in paddock trials, it was stated.

Sports News

- Two Hockey players S'Shri Balbir Singh and Balwinder Singh have been selected by the Indian Hockey Federation for the Senior National Hockey Coaching Camp to be conducted at New Delhi in preparation for the coming Olympic Games.
- A Seminar of Non-aligned countries on Sports is being held in India at the National Sports Institute, Patiala from 5th to 18th March, 1984. Delegation from about 40 Non-Aligned countries are likely to participate in the Seminar. It will discuss various aspects of cooperation between the Non-Aligned countries in the field of Sports.
- The Canadian Women's Field Hockey Association has been selected to host the 1986 World Cup. It will take place in Vancouver (29th June-12th July, 1986).
- The Xth Asian Games are proposed to be held from 3rd to 18th October, 1986 at Seoul.
- The Indian Airlines Hockey Team has won the Senior National Hockey Championship which recently concluded at the National Stadium in New Delhi.

AN INDISPENSABLE TREATISE FOR THE LIBRARIES OF THE UNIVERSITIES, COLLEGE, EDUCATIONAL INSTITUTIONS, EDUCATION DEPARTMENTS AND ITS OFFICERS, EDUCATION BOARDS, TEACHING AND NON-TEACHING STAFF, STUDENTS, BENCH AND BAR AND ALL OTHER CONCERNED WITH THE EDUCATIONAL INSTITUTIONS IN ANY MANNER

Law of Education & Educational Institutions in India

(Government, Government-aided, Public & Private)

DEALING EXHAUSTIVELY WITH

- General** : State Control and its Constitutional Implications, Establishment and Closure, Religious Instructions, Minorities Institutions, Grants Taxation etc
- Service Matters** : Conditions of Service, Appointments, Promotions Confirmation Disciplinary Proceedings Seniority, Salary, Pension, Retirement, Compulsory Retirement, Superannuation, Age, Leave, Promotion, Termination, Reversion, Suspension, Re-instatement, Appeals Reviews and Writ Petitions, thereto, etc
- Students** : Admissions, Reservations, Examinations Expulsions, Rustication, Ragging, Indiscipline, Unrest and Unions, etc

BY

R.D. Agarwal

Advocate

1982 Edition—In 3 Volumes—3,000 Royal Pages—Deluxe Binding—Rs 360 00 Per Set

VOLUMES 1 & 2 Released—VOLUME 3 Fast Progressing

It is the first book of its kind published in India. There are hundreds of Central and States Legislations relating to Education and Educational Institutions. It is very difficult to lay hands on all of them. The author has done a marvellous job in collecting all the cases on all these Statutes and presenting them in commentary form under appropriate chapters with suitable headings. Now the readers of every State can know the law laid down by the Supreme Court, and all the High Courts of the different States on any point of law relating to Education of all States at one place. All the ills of the society are today attributed to the Education system. There is a lot of unrest amongst the students and staff. Courts are full of cases with education matters, students matters and service matters of the educational institutions. On account of all this confusion there is hardly studies of few months in a year in the educational institutions, and many a times Institutions are having Zero years.

All these complications are due to the fact that Education Department of the Government Management of the Institutions, teaching and non-teaching staff and the students do not know their rights, duties, powers and obligations. This book fulfils their long felt need. Every section of every Education Act has been interpreted by Superior Courts and given a new meaning. This book reveals all such interpretations to the reader for the first time. We are sure that after this book is read by all the concerned, a lot of confusion will be over and litigation will be reduced.

The 29 Chapter headings of this book are as under

VOLUME 1

1 Introductory & Preliminary, 2 Interpretation of Statutes, 3 Definitions, 4 Establishment & Closure of Educational Institutions, 5 Religious Instructions in Educational Institutions & Minority Educational Institutions, 6 Educational Authorities and Officers, 7 Grant-in-aid, 8 Admission of Students to Educational Institutions, 9 Reservations

VOLUME 2

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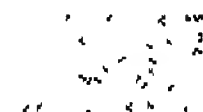
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1. Babu, K.S., *Population study*, U. Delhi, Dr. M.K. Bhasin.

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14 Sharma, R B L *Swatantrata prapti ke pashchat Uttar Pradesh mein sanghit udyogon mein samajik suraksha ka adhyayan* Agra U

15 Shiv Saran Lal *Bharat mein charam udyog Uttar Pradesh ke pariprekshya mein* Kanpur U

16 Singh, Chandra Pal *Role of farm financing institutions in augmenting production, productivity, income and employment in farming in District Basti* CSAT, Kanpur

17 Singh, J N *Uttar Pradesh ke krishi arthavayastha mein Rae-Bareilly Jampad ke lift sinchar parivahanon ke yogdan ka mulyanakan* Kanpur U

18 Singh, K B *Agricultural and economic development in Bihar with reference to food grains* Mag U, Bodh Gaya

19 Singh, Tilak Raj *An enquiry into farm structure resource use and productivity on farms in District Meerut, U P* Kanpur U

20 Tewari, Ram Gopal *A Survey of industrial potential of District Sitapur in U P* Kanpur U

21 Tripathi, Shiv Kishore *Inflation and economic development in India during the first two decades of the plan period* Avadh U

Law

1 Sadasivan Nair, G *Mental abnormality and criminal responsibility* U Cochin

Military Science

1 Gupta, Rajan Kant *Military traits of Tatya Tope* Kanpur U

Education

1 Bajadur S K *A comparative study of values, attitudes and conformity behaviour of adolescents in Kanpur* Kanpur U

2 Daulat Ram *Organisational climate and innovativeness of school in relation to teaching effectiveness* U Jammu

3 Dinesh Chandra *The implementation of the Directive in Article 45 of Constitution in U P and its problems* Kanpur U

4 Jalcel, P M *Education and economic growth in Malappuram* Calicut U

5 Kamlesh *Anusuchit Janjati evam anusuchit jati ke chhatron ke atmabodh, samavojan, ruchh tatha abhipreina paddhati ka tulnatmak adhyayan* Kanpur U

6 Manvikar, Sharada *A critical study of the relationship between the expenditure pattern and efficiency levels of the secondary schools of Bangalore District* U Mysore

7 Misra T P *Financing of higher education in Uttar Pradesh after independence* Kanpur U

8 Pande, Premalal *An analytical study and development of the secondary school curriculum in Maharashtra* Nagpur U

9 Pandey, Prakash Narain *The curriculum and methods of teaching in ancient India and their relevance to modern times* Kanpur U

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13 Sharma, Rakesh *Student morale as a correlate of educational environment in the school* Pb U Chandigarh

14 Shukla, Shradha *The effect of anxiety socio-economic status and personality on the proficiency of the secondary school teachers* Kanpur U

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16 Vardhini, V P *Development of a multimedia instructional strategy for teaching science (Physics and Chemistry) at secondary level* MSU, Baroda

17 Verma R S *A study of socio-psychological make up of adolescents belonging to Scheduled Tribes Thurn and Boksia in Nainital District* Kum U, Nainital

Commerce

1 Agarwal, V K *Marketing of dairy products in Western U P* Agra U

2 Awasthi, J P *Problems of rural finance in Uttar Pradesh with special reference to the Eastern Districts* Kanpur U

3 Bajpai, N K *Working of Life Insurance Corporation of India* Kanpur U

4 Daud S *A study of size and structure of cotton textile industry in M P* Bhopal U

5 Dixit V B *A study of Employees State Insurance Scheme with special reference to U P* Kanpur U

6 Gupta Baj Nath *Uttar Pradesh mein swatantrata prapti ke pashchat sahkarit krishi vijnan ka itihaz* Kanpur U

7 Joshi, K C *Vaniyaya, udyog evam krishi ke vitt prabandhon mein vyaparik bankon evam deshi bankers ke bhoomika* Kum U, Nainital

8 Katiyar, R C *Accounting for price level changes* Kanpur U

9 Mukherjee, Deepankar *India's trade with socialist countries since 1961 with special reference to East European countries* Kanpur U

10 Ravindra Kumar *A study of finances and working of Uttar Pradesh State Road Transport Corporation* Kanpur U

11 Saursh Chander *Cost management and control in tractor industry of India* U Delhi

Home Science

1 Puar, Mrunalinidevi Anandrao *Essential trace element profile and zinc availability in Indian foods and diets* MSU, Baroda

Management

1 Chandrasckharan Pillai N *Recruitment and training of managers in the public sector concerns in Kerala* U Cochin

2 Karunes, Sabita *Factors related to professional productivity A study of scientists and engineers in Indian Institutes of Technology* IIT, Delhi

3 Mishra Dinesh *Financial planning and control in major state enterprises of Bihar with special reference to Bihar State Road Transport Corporation and Bihar State Electricity Board* Bihar U, Muzaffarpur

4 Suresh, K A *The economics of cardamom plantation in Kerala* U Cochin

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Applications are invited for the following posts to work under a research project entitled 'Regulation of glutamine metabolism in controlling ammonia toxicity in air-breathing fishes' sanctioned by the UGC for 3 (three) years to Dr B K Ratha, Reader Zoology Department NEHU, Mayurbhanj Complex Shillong-793014 as the Principal Investigator

1 Junior Research Fellows Two posts

Consolidated Monthly Salary Rs 600/- P M for the first two years and after assessment Rs 700/- P M for 3rd year

2 Field Assistant One post Rs 400/- P M (Consolidated)

Qualifications Candidates for JRF should have a first or high second class (at least with 55% marks) M Sc in Zoology/Life Sciences with specialisation in Physiology & Bio-Chemistry or M Sc in Bio-Chemistry. Research experience in Animal Physiology and Bio-Chemistry will be additional qualification

Candidates for Field Asstt should have passed H S L C or equivalent Examination. Qualifications could be relaxed in cases of candidates having good experience in field or laboratory work related to the project

The applications in plain paper stating name, address for correspondence date of birth and qualifications (supported by evidences), and at least one testimonial about the academic competence of the JRF candidates only should reach the Principal Investigator by name on or before 15th March, 1984. The selected candidates should be prepared to join immediately

Mrs M.R Mawlong
REGISTRAR

PANJAB UNIVERSITY CHANDIGARH

Corrigendum

In the Advertisement No 2/84, the post of Reader in Sociology may be read as Reader in Urdu

INDIAN INSTITUTE OF TECHNOLOGY, DELHI HAUZ KHAS : NEW DELHI-16

Advertisement No. 4/84

Announcement for Faculty Positions

A Post	Professor
B Pay Scale	Rs 1500-60-1800-100-2000-125/2-2500 (plus allowances as applicable in Government of India) Emoluments Minimum Rs 2575/- Maximum Rs 4200/-
C Departments and Specialisations for which Positions will be Filled	
Department	Specialisations
1 Department of Applied Mechanics	Solid Mechanics, Design Methodology and Optimization, Stress analysis Fluid Mechanics, Solid Transportation through Pipes Physical Metallurgy and fracture of Steels
2 Department of Chemical Engineering	Process Dynamics & Control Chemical Reaction Engineering Transfer Process Process Design Simulation & Modelling Chemical Engineering, Thermo Dynamics
3 Department of Civil Engineering	Soil and Rock Mechanics, Structural Engineering, Water Resources Engineering, Transportation Engineering, Offshore Structures, and Curriculum Development in Civil Engineering
4 Department of Mechanical Engineering	Design Thermal Production and Industrial Engineering
5 Department of Electrical Engineering	All areas of Electrical, Electronics Engineering including digital electronics, microprocessor, computer applications and optoelectronics & Optical Communication
6 Department of Textile Technology	Textile Engineering and Mechanical Processing
7 Department of Humanities & Social Sciences	Sociology, Economics—Mathematical/Industrial, English language
8 Department of Chemistry	Bio-chemistry
D Minimum Qualifications/Experience Prescribed for Recruitment	
(a) For Departments mentioned at Sl. No. 1 to 6 of Column "C" above.	

An eminent scholar with published work of high quality actively engaged in research. Ten years experience of teaching and/or research. Experience of guiding research at doctoral level

OR

An outstanding Engineer/Technologist with established reputation who has made significant contribution to knowledge

(b) For Department mentioned at Sl. No. 7 & 8 of Column "C" above

Good Master's Degree/Doctorate degree in appropriate field with minimum 7-10 years' distinguished experience in Institution of University standard at post-graduate level, specialised knowledge in one or more specialised fields with experience in guiding research. Professional/Scientific work of outstanding merit and Doctorate degree would be preferred

Prescribed application forms with detailed particulars may be obtained from the Deputy Registrar (E-1), Indian Institute of Technology, Delhi, New Delhi-16 either in person or sending by post, a self-addressed stamped envelope (size 10 x 23 cms) bearing postage stamps of 95 paise. Last date for submission of Application Forms along with Indian Postal Orders in favour of Registrar, IIT Delhi worth Rs 7 50 (Rs 1 87 for SC/ST candidates), is 10-3-1984 for candidates in India and 20-3-1984 for candidates abroad

**SRI SATHYA SAI INSTITUTE
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Applications for the following posts in the departments noted are invited. Posts will carry UGC Scale of Pay

Minimum Qualification

For Professor Ph.D. with 10 years teaching experience

For Reader Ph.D. with 5 years teaching experience

For Lecturers Ph.D. with 2 years teaching experience. Condition regarding minimum experience in this category is relaxable

Prasanthnilayam Campus (For men)

(1) Department of Mathematics

Professor—1

Reader—1

Areas of specialisation

Professor Functional Analysis/Operation Research with background of Numerical Analysis/Fluid dynamics with Mechanics and Differential Equations background/Topology/Modern Algebra and Statistics

Reader Statistics and Operation Research

(2) Department of Physics

Professor—1

Lecturer—1

Areas of specialisation

Professor Theoretical Physics, Molecular Physics/Modern Optics and Lasers,

Lecturers Theoretical Physics (with emphasis on Mathematical methods/

Optics and Spectroscopy/Material Science

(3) Department of Chemistry

Readers—2

Lecturers—2

Areas of specialisation inorganic/Analytical/Physical/Theoretical/Bio-chemistry

(4) Department of Bio-Sciences

Readers—2

Areas of specialisation Environmental Biology/Histophysiology and Histopathology

(5) Department of History & Indian Culture

Professor—1

Reader—1

Lecturers—2

Areas of Specialisation Indian philosophy with Sanskrit Literature/Theory of Yoga, with basic degree in Psychology or Philosophy/Modern History

(6) Department of Commerce

Professor—1

Readers—2

Lecturers—2

Areas of specialisation Management Accounting/Accounts and Finance/Statistics and Quantitative Analysis/Bank Management

(7) Department of English

Reader—1

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Areas of specialisation - English Literature/American Literature/Commonwealth and Indian English Literature General Linguistics with reference to English/phonetics of English/Grammar and usage of English/principles of teaching English as second Language

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(1) Department of English Language and Literature -

Professor—1

Reader—1

Lecturer—1

Areas of specialisation Same as above

(2) Department of Commerce

Lecturer—1

Areas of specialisation - Any field in Commerce

(3) Department of Mathematics

Lecturer—1

Areas of specialisation Any field in Mathematics

The Institute is committed to carrying out R & D work adopting Inter-disciplinary and Cross-disciplinary approach. Hence the candidates applying for the various positions

must have the aptitude to work in a team of inter-disciplinary nature

Apply to the Registrar giving full bio-data, subjects studied, class obtained, certified copies of Degrees including Doctorate degree, list of publications with reprints and accompanied by crossed Demand Draft for Rs 10/- drawn in favour of Sri Sathya Sai Institute of Higher Learning, Prasanthinilayam

Last date for receipts of applications is **31st March, 1984**

REGISTRAR

UNIVERSITY OF JAMMU

Situation Vacant

Applications on the prescribed form are invited for the following posts so as to reach the undersigned on or before **31 March, 1984** —

1 Professors (Rs 1500-2500), Chemistry (two posts one each in Organic and Inorganic), Urdu (One post) and one post each in Political Science and Economics (Liea Vacancies)

2 Readers (Rs. 1200-1900), Chemistry (two posts, one each in Physical and Organic Chemistry of Plant Products), one post each in English, Mathematics (Modern Algebra), Library Science and Computer Science

3 Lecturers (Rs 700-1600), one post each in English (Language Oriented Course and for Literature), Education, Computer Science and Mathematics (Geometry, Differential/Riemannian)

Prescribed application forms and other details can be had from Shri Vachaspati Sharma, Assistant Registrar (Forms & Stationery) by sending a self-addressed envelope (25 cms x 10 cms) bearing postage stamps worth Rs 4/- alongwith crossed postal order worth Rs 20/-, drawn in favour of the Registrar University of Jammu, Canal Road, Jammu (Tawi)-180001, encashable at Jammu Post Office

J R Rathore
REGISTRAR

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A Weekly Journal of Higher Education & Research
(Published on 1, 8, 16 & 23 of every month)

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INDIAN INSTITUTE OF TECHNOLOGY

KHARAGPUR

Advertisement No. R 184

Applications are invited for the undermentioned posts at the Indian Institute of Technology, Kharagpur, West Bengal.

Posts

I Professors

Scale of Pay: Rs. 1500-60-1800-100-2000-125-2-2500 - plus D.A. as admissible.

Age: Preferably below 50 years.

Qualifications & Experience

Essential

An eminent scholar with published work of high quality, actively engaged in research. Ten years' experience of teaching and/or research. Experience of guiding research at Doctoral level.

OR

A person standing Engineer/Technologist with established reputation who has made significant contribution to knowledge.

N.B. - If a person is not found suitable for the post of Professor, he may be offered the post of Associate Professor on the scale of Rs. 1500-60-1800-100-2000 -

Fields of Specialisations

A. Agricultural Engineering Section under Agricultural Engineering Department - One post.

Degree in Agricultural Engineering, Agricultural Engineering Civil Engineering.

Desirable

Experience in Coastal Hydraulic model studies water management for aquacultural farms.

B. Curriculum Development Cell under the Quality Improvement Programme, Govt. of India - One post (Temporary).

Electrical Engineering, Electronics & Electrical Communication Engineering, Computer Science and Engineering.

Desirable: Previous experience in Curriculum Development.

II Assistant Professors

Scale of Pay: Rs. 1200-50-1700-60-1900 - plus D.A. as admissible.

Age: Preferably between 20 and 45 years.

Qualifications & Experience

Essential

Good academic record with Doctor's degree in a relevant field. About 5 years' experience of teaching and/or research and development.

Candidates not possessing Ph.D. may be considered if they have to their credit equivalent research published work of design development work of a high order either in the institution or in an industry.

OR

In the case of persons to be recruited from industry or professional fields, candidates should possess good academic record with recognised professional work of about 7 years which should include innovation and/or research and development.

Fields of specialisations

A. Physics & Meteorology Department - One post.

(Specialization in one of the following is required)

1. Nuclear Physics (Theoretical/Experimental).

2. Elementary Particle Physics (Theoretical).

3. X-Rays and Structure of Matter (Experimental).

4. Solid State Physics (Theoretical/Experimental).

Theoretical Physics (Quantum Mechanics/Statistical Physics).

B. Rubber Technology Centre - One post.

Candidate with degree in Physics, Chemistry, Chemical Engineering, Mechanical Engineering/Equivalent degree with experience of having worked in the field of Rubber Technology is recruited.

C. Curriculum Development Cell under the Quality Improvement Programme, Govt. of India - Two posts (Temporary).

Electrical Engineering, Electronics & Electrical Communication Engineering, Computer Science and Engineering.

Desirable: Previous experience in Curriculum Development.

III Lecturers

Scale of Pay: Rs. 700-40-1100-50-1600 - plus D.A. as admissible.

Age: Preferably between 28 and 35 years.

Qualifications & Experience

Essential

(i) Master's degree in appropriate field in Engineering Technology.

(ii) Consistently good academic record with a Bachelor's degree in Engineering Technology - First Class or Bachelor's degree and/or Master's degree level.

(iii) One year's relevant professional experience outside academic research institutions.

Having regard to the requirements of emerging field of Engineering and of developing interdisciplinary programmes, the requirements of Engineering Technology degrees may be waived in the cases of otherwise well qualified candidate.

If a candidate does not possess professional experience or a person possessing such experience is not found suitable, the person appointed will be required to obtain desired professional experience within a period of five years of his appointment failing which he will not be able to earn future increments, until he fulfils this requirement.

Fields of Specialisations

A. Civil Engineering Department

One post

Environmental Engineering and Sanitation, Public Health Engineering.

B. Naval Architecture Department

Two posts

Ship Design, Ship Hydromechanics, Ship Motions, Ship Production, Ship Structures, Ocean Engineering Structures and Vehicles.

IV. Homoeopath Medical Officer (B.C. Roy Technology Hospital)

One post

Scale of Pay: Rs. 700-40-900-EB-40-1100-50-1300 - plus D.A. and Non-practising allowance as per rules.

Age: Not exceeding 35 years (Not exceeding 40 years for Scheduled Caste and Scheduled Tribe candidates). Relaxable for Government Servants.

Qualifications

Essential

(i) B.M.S. (Homoeopathy), D.H.M., D.M.S. (Hons), B.M.B.S. or M.H.M.S., D.H.S. or equivalent Diploma (4 years' course) or G.H.M.S. degree (Agra) or equivalent.

(ii) At least five years of Homoeopathic practice in a recognised Hospital or Dispensary.

Note: The period of service rendered by the Doctors who were drafted to serve the Defence Forces under compulsory Liability Scheme is counted in reckoning experience.

Desirable

(i) B.Sc. or equivalent degree in Science from a recognised University.

(ii) Post-graduate Diploma/Degree in Homoeopathy.

Duties

(i) Medical attendance & treatment of Institute employees, members of their families and other beneficiaries covered under the Institute Medical Rules.

(ii) To pay domiciliary visits at the residences of beneficiaries in case of emergency or whenever considered essential.

(iii) Any other duty that may be assigned to him from time to time.

V. Assistant Registrar - One post (Reserved for Scheduled Caste/Scheduled Tribe candidates).

Scale of Pay : Rs 700-40-900-EB-40-1100-50-1300/- plus D A as admissible

Qualifications Essential

- (i) A good degree in Arts, Science, Commerce or Business Management
- (ii) Must have good knowledge of procedure of general administration or accounting of each and other transaction, preferably both, and be able to draft reports and minutes of conferences
- (iii) At least 10 years' experience in a responsible position under Govt or in a large educational institution or business organisation of repute

Desirable

- (i) Experience of supervision of Establishment work, meeting and conference work
- (ii) Experience in O M Unit work
- (iii) Capacity to develop corporate life within the educational institute

VI Assistant Engineer (Civil) Maintenance Unit One post (Temporary)

Scale of Pay Rs 650-30-740-35-810-EB-35-880-40-1000-EB-40-1200/- plus D A as admissible

Qualifications & Experience Essential

Graduate in Civil Engineering with a minimum experience of 3 years or Diploma holder in Civil Engineering with a minimum experience of 8 years of which at least 5 years experience in Construction, Maintenance and Civil Works of Public Health Engineering

The qualifications regarding experience is relaxable at the discretion of the competent authority in the case of candidates belonging to the Scheduled Castes or Scheduled Tribes, if at any stage of selection, the competent authority is of the opinion that sufficient number of candidates from these communities possessing the requisite experience is not likely to be available to fill up the vacancies reserved for them

Application forms may be had from the Registrar on request along with an unstamped self-addressed envelope of size 23 cm x 10 cm. Applications accompanied with an application fee (non-refundable) of Rs 7.50 (Rs 1.87 for SC/ST candidates) payable by means of crossed Indian Postal Order to the Indian Institute of Technology, Kharagpur at Kharagpur-721 302. Post Office should reach the Registrar, Indian Institute of Technology, Kharagpur by the 30th March 1984.

Applicants who are in the Employment of Government/Semi-Government Organisation or of any Government

undertaking must send their applications through proper channel

A.K. Sur
REGISTRAR

INDIAN INSTITUTE OF TECHNOLOGY

P O IIT, POWAI, BOMBAY-400 076

Advertisement No A-183/84

Faculty Positions in Industrial Management & Earth Sciences

Applications are invited for the following permanent posts at this Institute, in the prescribed form obtainable free of charge from the Registrar, Indian Institute of Technology, P O IIT, Powai, Bombay-400 076, on request accompanied by a self-addressed envelope (25 cm x 10 cm). Persons employed in Government/Semi-Government Organisations or Educational Institutions should apply through proper channel.

All applicants should supply a detailed account of their academic and professional record including a list of publications, names and addresses of three professional references and copies of selected publications.

Indian candidates abroad may apply on plain paper enclosing two copies of their bio-data.

The posts carry allowances such as D A, C C A, H R A as per rules of the Institute which at present correspond to those admissible to the Central Government employees stationed at Bombay. Depending on qualifications and experience, higher salary may be offered. A candidate may be considered for a lower position of a Lecturer if not recommended for the post of Assistant Professor. Completed applications should reach the Registrar, IIT, P O IIT, Powai, Bombay-400 076 on or before 16th April, 1984.

Some posts of Lecturers are reserved for the candidates belonging to SC/ST community.

Assistant Professor Scale of Pay Rs 1200-50-1300-60-1900

Lecturer Scale of Pay Rs 700-40-1100-50-1600

Total emoluments on the minimum of the scale excluding H R A

On basic pay of Rs 1200/- Total emoluments Rs 2345/-

On basic pay of Rs 700/- Total emoluments Rs 1589.35

1 Interdisciplinary Programme in Industrial Management

The Management Programme at the Indian Institute of Technology is committed to excellence in the education, research and practice of industrial management. The educational prog-

ramme leading to Master's and Doctoral degrees, follows three distinguishable and related lines, viz theoretical studies, applied studies and practical exposure and is designed to develop basic skills, strengthen functional skills and deepen understanding of the environment in which organisations operate.

The Institute encourages the participations by the faculty in sponsored projects and consultancy assignments. Bombay and the Western Region offers excellent scope for close interactions with the Industry.

Qualifications & Experience Assistant Professor

Applicant should have consistently good academic record with Bachelor's degree in Engineering, M B A or equivalent or M Tech in a closely related field and preferably Ph D in Management, from well-recognised institutions in India or abroad. About 5 years' experience in industry, research and/or teaching.

Lecturer

Applicant should have consistently good academic record with Bachelor's degree in engineering, M B A or equivalent or M Tech in a closely related field and preferably Ph D, in Management from well-recognised institutions in India or abroad. About one year's experience in teaching, industry or research desirable.

Field of Specialisations (in one or more of the following)

Marketing Management, Accounting, Business Economics and Finance, Computers and Systems Analysis, Production Management, General Management.

2 Department of Earth Sciences Lecturer in Geology

Applicant should have an excellent academic record with Doctorate Degree in Geology/Geophysics/Geochemistry from a recognized university or institute, with specialisation in one or more of the following fields and with a minimum of one year of teaching/industry/research experience after obtaining Ph D Degree.

Field of Specialisations

Geophysics with experience in prospecting, structural geology and mining geology, marine geology, hydrogeology and environmental geology.